



# MONTANA DNRC

Annual Report – Fiscal Year 2011

## About DNRC

“Helping to ensure Montana’s land and water resources to provide benefits for present and future generations” is the mission of the Montana Department of Natural Resources and Conservation (DNRC).

First established in 1971 as a result of the Executive Reorganization Act of that year, the DNRC provides leadership in managing the state’s natural resources. It is responsible for promoting the stewardship of Montana’s water, soil, forest, and rangeland resources and for regulating forest practices and oil and gas exploration and production. In the past eight years, the agency has generated \$425 million for Montana school children through the sound management of state lands.

Mary Sexton is DNRC’s director.

### Department Organization

The department is organized into six divisions:

- Conservation and Resource Development
- Forestry
- Oil and Gas Conservation Division
- Reserved Water Rights Compact Commission
- Trust Land Management
- Water Resources

Two of the divisions—the Oil and Gas Conservation Division and the Reserved Water Rights Compact Commission—are attached to the department for administrative purposes only. In addition to the divisions mentioned above, the Director’s Office oversees agency legal services, human resources, information technology, communications, and fiscal operations.



1625 Eleventh Avenue  
PO Box 201601  
Helena, MT 59620-1601  
Phone: (406) 444-2074  
Fax: (406) 444-2684

Visit us online at [www.dnrc.mt.gov](http://www.dnrc.mt.gov)

## From the Director

Dear Montanans,

Water, water everywhere in Montana seemed to be a constant during late 2010 into 2011! We experienced record snowpack in the mountains during the winter on the heels of a rainy summer and fall. Then came spring with high run-off and more than expected rain. The weather factor El Niño has been a blessing and a curse in Montana recently. And we at DNRC are helping Montanans cope with water this year!

Water is one of our most precious resources, but it’s been a bit overwhelming lately. DNRC staff have helped with lots of water issues whether it’s a lost irrigation headgate due to flooding, permitting on navigable rivers, or money for local drinking water systems. We continue to assist communities with floodplain management, and we oversee forestry practices making sure that streamside management protects our water resources. Water management has been a high priority for the DNRC this year. In this annual report, we give you examples of how all of us are working with Montanans to manage not only flood waters but all water in the state.



Mary Sexton

Mary Sexton,  
Director

Visit the Director’s Office website at [www.dnrc.mt.gov/director](http://www.dnrc.mt.gov/director)

## Conservation and Resource Development Division

The Conservation and Resource Development Division (CARDD) helps Montanans manage the state’s natural resources and provides financing for conservation resource management and reclamation activities. In Fiscal Year (FY) 2011, the division had 26 employees in three bureaus: Conservation Districts, Financial Development, and Resource Development.

### Fiscal Year 2011 Highlights for the Conservation and Resource Development Division

CARDD continues to help Montana communities and citizens work toward protection and preservation of their natural resources. The division awarded \$62 million in loan contracts and grants, funding water and wastewater infrastructure improvements for more than 60 community and natural resource projects throughout the state. Other division activities this year include:

- granted \$1.1 million to conservation districts for watershed planning, 310 permit assistance, administration, and stewardship projects;
- processed 179 renewable resource grants for projects ranging from floodplain mapping in the Flathead Basin to replacement of leaking water distribution lines in the town of Superior;
- provided irrigation loans and grants totaling \$20 million to 376 private entities;
- provided \$9.6 million for regional water systems to bring good quality and adequate quantity of water to rural water users;
- conducted 32 workshops around the state to help Montanans be better stewards of Montana’s natural resources. Subjects included: conservation district training, riparian management, and watershed protection for small acreage landowners.
- funded 53 reclamation and development projects for activities ranging from a hydrologic investigation of the Smith River to mitigation of contaminated drainage from a closed coal mine near the town of Belt; and
- financed \$250,000 of salinity control work to restore Montana land. Over 300,000 acres statewide are affected by saline seep.



New water tank for the town of Eureka. Photo by Bob Fischer

Visit the CARDD website at [www.dnrc.mt.gov/CARDD](http://www.dnrc.mt.gov/CARDD)

## Forestry Division

The Forestry Division plans and implements forestry and fire management programs serving Montana communities, fire departments, and private landowners through an extensive network of field staff and cooperators across the state. The Forestry Division has four major functions: forestry assistance, fire and aviation management, business management and policy, planning and outreach.



The DNRC conservation seedling nursery produces trees and shrubs for riparian restoration, reforestation, and shelterbelt projects around Montana. Photo by Montana DNRC

### Fiscal Year 2011 Highlights for the Forestry Division

Forestry assistance programs, including urban forestry, forest health, stewardship, conservation seedling nursery, and biomass utilization, are delivered via grants to communities and landowners, educational workshops and technical assistance. Forestry assistance programs support watershed restoration, riparian management, and water quality protection during timber harvest operations. Program highlights in 2011 include:

- administering Montana’s Streamside Management Zone (SMZ) Law, which protects water quality by regulating and/or prohibiting certain activities within the SMZ;
- promoting Forestry Best Management Practices (BMP) to minimize non-point source water pollution from forest practices.
- state and federal grants exceeding \$4 million for fuels reduction, urban forestry, and forest stewardship projects; and
- producing conservation seedlings for reforestation, shelterbelts, and riparian restoration projects.

Fire and aviation management programs, including fire training, prevention, equipment development, suppression and GIS support, are designed to build and maintain firefighting capabilities for local and state fire agencies. Fire suppression is integral to protecting watersheds from wildfires, particularly with increased mortality due to mountain pine beetle and other forest health threats. Highlights from 2011 include:

- developping and delivering 21 wildland fire engines for use in the County Cooperative Fire Protection Program;
- maintaining an initial attack success rate of 95% or greater for all fires on DNRC protection; and
- passing SB 128 exempting local government fire agencies from permitting requirements when utilizing water from wells for emergency fire protection.

Go to [www.dnrc.mt.gov/Forestry](http://www.dnrc.mt.gov/Forestry) to visit the Forestry Division website.



## Oil and Gas Conservation Division

The Oil and Gas Division is the staff of the Board of Oil and Gas Conservation (board) and is attached to the Department of Natural Resources and Conservation for administrative purposes. The division regulates the oil and gas industry with 16 employees in three offices and three home-based locations across the state.



Private water-hauling trucks lining up at a private disposal site (the Elvin Horob 1-20 disposal site in Roosevelt County). Photo by Board Field Inspector Bob Schmidt

In 2010, 329 new wells were permitted in the state, with 125 permits issued for horizontal wells. Most of the horizontal well activity is in the northeastern part of the state, mainly in Richland, Roosevelt, and Sheridan counties. The method of completing horizontal wells has changed dramatically with the recent introduction of hydraulic well fracturing. Essentially all horizontal wells in the Bakken Formation in northeastern Montana are hydraulically fractured as part of the well completion process.

- Hydraulic fracturing requires a lot of water. It takes approximately three Olympic-sized swimming pools of water (1.8 million gallons total) to hydraulically fracture one well.
- The water used in hydraulic fracturing does not have to be of drinking water quality, but it does have to be fresh.
- Most hydraulic fracturing water is purchased from municipalities, irrigators, private well owners, and middlemen who seek out and sell other fresh water sources.
- After operators obtain their fresh water and complete hydraulic fracturing, much of the solution pumped into the well comes back out and must be disposed of.
- One of the few authorized ways to dispose of used fracturing fluid is through disposal wells, which inject hydraulic fracturing fluid into formations isolated from fresh water sources by thousands of feet of bedrock.
- The board recently adopted rules regarding hydraulic fracturing and disclosure of fracturing fluid components. The rules, public comments, responses to comments, and the testimony of the rules hearing can be found at [www.dnrc.mt.gov/bogc](http://www.dnrc.mt.gov/bogc).

Visit us online at [www.dnrc.mt.gov/bogc](http://www.dnrc.mt.gov/bogc)

## Reserved Water Rights Compact Commission



Governor Brian Schweitzer, with sponsor Betsy Hands, signs HB 49, authorizing the sale of bonds to satisfy the state's commitment to fund the Blackfeet Water Compact. Photo courtesy of the Governor's Office

The nine-member Reserved Water Rights Compact Commission (RWRCC) was created by the Legislature in 1979. The commission's purpose is to negotiate water settlement agreements with Tribes and federal agencies in Montana (2-15-212, MCA). The compacts are negotiated as part of Montana's statewide water adjudication program and are an important component of accurately quantifying water use in Montana (85-2-701-708, MCA). The RWRCC is administratively attached to DNRC with a staff of one attorney, one hydrologist, an agricultural engineer, a GIS analyst, and a staff director.

### Fiscal Year 2011 Highlights for the Reserved Water Rights Compact Commission

Work continues on negotiating a water rights compact with the Confederated Salish and Kootenai Tribes of the Flathead Reservation and the United States. Some components of the settlement have progressed: compact drafting, Unitary Management Ordinance drafting, allowances for domestic wells and stockwater development, providing a source of replacement water from Hungry Horse Reservoir, and instream flow for fisheries. Updated information may be seen at: [www.dnrc.mt.gov/rwrcc/Compacts/CSKT/](http://www.dnrc.mt.gov/rwrcc/Compacts/CSKT/).

In 2011, the Montana Legislature passed HB 49 authorizing issuance of general obligation bonds for \$16.15 million to complete the state's \$35 million commitment to fund the Blackfeet Water Compact. The bonds will be issued upon ratification by the U.S. Congress and the Blackfeet Tribe. The Blackfeet Water Rights Settlement Act (S. 399) was introduced to the U.S. Congress in 2011 and referred to the Senate Committee on Indian Affairs.

In 2010, the 1999 Crow Water Compact was ratified by Congress and signed by the President. The Crow Tribe ratified the compact by referendum in March 2011. The water settlement includes \$460 million to rehabilitate the Crow irrigation system; construct a municipal, rural, and industrial system on the Reservation, and to fund other improvements on the Reservation.

The commission continues to move forward on other federal reserved water rights to be settled in Montana, including those of the Charles M. Russell/UL Bend National Wildlife Refuge and the BLM Upper Missouri Breaks National Monument. The RWRCC was extended by the 2009 Legislature to sunset July 1, 2013.

All compacts may be viewed on the RWRCC web page at: [www.dnrc.mt.gov/rwrcc](http://www.dnrc.mt.gov/rwrcc)

## Trust Land Management Division

The Trust Land Management Division (TLMD) administers and manages the state school trust timber, surface, mineral resources, and navigable rivers for the benefit of the Common Schools (K-12) and other endowed institutions in Montana, under direction of the State Board of Land Commissioners.

### Fiscal Year 2011 Highlights for the Trust Land Management Division

The TLMD manages land activities on over 5.1 million surface acres and over 6.2 million acres of mineral estate. Land management activities are conducted in six area offices and four programs: Agriculture and Grazing, Forests, Minerals, and Real Estate.

- In FY 2011, land management and interest generated more than \$108 million in gross revenues, of which \$55.9 million was distributed to the Common Schools, in addition to the School Facility and Technology Fund of \$3.7 million.
- Mineral revenue totaled \$41 million in FY 2011, including \$33 million in oil and gas revenues.
- In 2011, SB 35 clarified the definition of navigable rivers pertaining to the state's management authority for specific uses of those rivers and was effective October 1, 2011. The department will develop rules to implement this statute.
- In 2009, HB 674 authorized issuance of a \$21 million general obligation bond for purchase of 32,210 acres in the Potomac Valley. HB 674 dedicated ownership of these lands to a public school land trust, under management and administration of the DNRC. The lands in the Potomac Valley were purchased in December 2010.
- The Forest Management Bureau finalized work on the proposed DNRC Habitat Conservation Plan (HCP) developed in conjunction with the U.S. Fish and Wildlife Service. The Final HCP EIS was distributed to the public, comments were solicited and responded to, and are now posted on the project website.
- Agriculture and Grazing revenues increased to \$20.7 million in FY 2011 compared to \$17.9 million the prior year, primarily due to an additional \$2.6 million in agriculture lease revenue. The increase was driven by higher commodity prices coupled with excellent production throughout the state.



Grain harvest on Wolf Creek State Lease. Photo by Craig Roberts

Visit the TLMD website at [www.dnrc.mt.gov/Trust](http://www.dnrc.mt.gov/Trust)

## Water Resources Division

The Water Resources Division (WRD) promotes and coordinates the beneficial use, conservation, protection, and development of Montana's water resources. The WRD carries out its duties for the purpose of promoting the general welfare and prosperity of the people of Montana. Sound coordination of the development and utilization of the state's waters allows the division to protect existing uses and to promote adequate future supplies for domestic, industrial, agricultural, and recreational uses, as well as conservation of water for wildlife, aquatic life, and other beneficial uses.



Musselshell River in Roundup, May 26, 2011. Photo by Kestrel Aerial

### Fiscal Year 2011 Highlights for the Water Resources Division

#### Helping Communities Prepare for and Recover from the 2011 Floods

The 2011 floods substantially impacted almost every county in Montana. The WRD's Floodplain Program began working early in the year with various agencies, including Disaster & Emergency Services (DES) and Federal Emergency Management Agency (FEMA), to prepare Montana communities for the spring floods.

During and after this year's floods, WRD staff contacted local communities affected by the flood to help them access assistance from a variety of different agencies' regulatory, mitigation, and insurance programs including DES, FEMA, Natural Resources Conservation Service, Small Business Association, and DNRC. WRD is continuing to help people and communities recover from the 2011 floods and will continue to help communities plan for and, hopefully, lessen the impact from future floods. WRD has posted information to assist both flooded property owners and local flood plain administrators online.

#### State Projects Conditions

The WRD oversees 21 active water storage projects in Montana. These projects provide approximately 308,500 acre-feet of water annually for agricultural, municipal, and fishery purposes. The 2011 floods caused minor damage at several of Montana's water reservoir and canal projects. Sustained high flows exacerbated on-going maintenance at several projects.

WRD substantially enhanced monitoring of its projects during the high flows to ensure continued public safety. Projects in central Montana were hit hardest, as three separate canals were breached to protect projects, highways, property, and homes from flood water damage. While irrigation was the original purpose for these projects, they now provide recreation, fisheries, drinking water, and flood control as well.

Go to [www.dnrc.mt.gov/wrd](http://www.dnrc.mt.gov/wrd) to visit the Water Resources website.

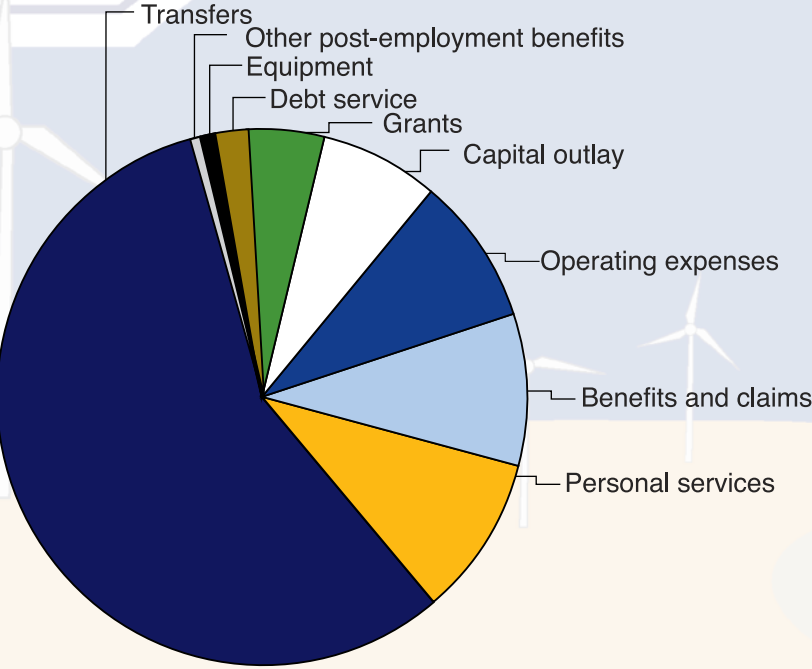


Financial Information

The tables and charts below present expenditures by category and fund type for the department in FY 2011. A substantial increase in Capital Outlay is due to two large purchases of state land, one using Land Banking proceeds and another using General Obligation (GO) bond proceeds.

Total Expenditures by Activity

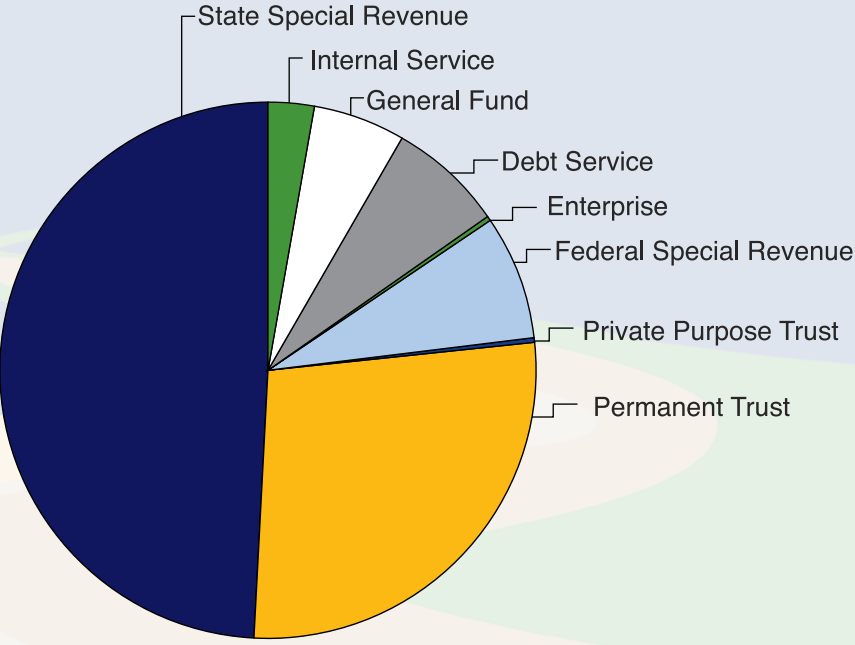
Personal services	\$ 36,816,778
Operating expenses	33,834,712
Equipment and intangible assets	865,859
Capital outlay	28,485,078
Grants	17,788,004
Benefits and claims	34,924,882
Transfers-out	220,162,437
Debt service	10,243,703
Other post-employment benefits	66,228
<b>Total</b>	<b>\$ 383,187,680</b>



Visit us online at [www.dnrc.mt.gov](http://www.dnrc.mt.gov)

Total Revenues by Fund

General Fund	\$ 21,625,904
State Special Revenue	192,408,333
Federal Special Revenue	29,896,296
Debt Service	27,444,806
Enterprise	645,012
Internal Service	1,878,429
Private Purpose Trust	1,001,393
Permanent Trust	108,287,507
<b>Total</b>	<b>\$ 383,187,680</b>



Visit [www.restoration.mt.gov](http://www.restoration.mt.gov) for natural land restoration resources.

On the Horizon

CARDD worked with communities in Montana to fund 15,000 water meters. Installing new water meters or replacing old water meters results in a dramatic increase in water use efficiency.



PVC pipe stockpiled for the Texas Avenue Water Main Extension Project in Whitefish. Photo by Bob Fischer

PPL Montana, LLC v. State. The U.S. Supreme Court is reviewing the Montana Supreme Court’s decision in PPL Montana, LLC v. State, 355 Mont. 402, 229 P.3d 421 (2010), which: (1) held that navigable riverbeds are public trust lands under Article X, section 11, of the Montana Constitution; and (2) upheld a judgment for the State of Montana in the amount of \$40,956,180 and interest as compensatory damages for PPL Montana’s unauthorized use of state-owned riverbeds, from 2000 through 2007, to generate hydroelectric power. If the State recovers funds from this litigation, SB 410 directs placing those funds in a public land trust acquisition account, to acquire additional lands for financial support of public education.

CARDD provided funding for a suction dredge to remove Eurasian Water Milfoil (EWM) from the upper Missouri River area where the invasive aquatic weed has been discovered. Over 1,200 pounds of EWM were removed.

CARDD helped conservation districts manage 113,000 acre-feet of water rights allocated to agricultural producers in the Missouri and Yellowstone basins.

Helping Irrigators

Flooding across the state damaged or destroyed many points of diversion that irrigators rely upon to get water to their fields. On June 21, the Governor issued Executive Order 08-2011 that allows irrigators to temporarily change their point of diversion to relocate pumps and headgates without prior approval from the DNRC if the need for the change was due to this year’s flooding.

The Executive Order expires December 31, 2011, at which time a formal authorization to change must be made with the department by filing a Notice of Replacement Point of Diversion Form 644 or an Application to Change a Water Right Form 606 (both are available at the website below). Water Resources Division staff are available to work with individual water users to help them decide what is the best way for them to proceed with replacing a point of diversion.

[http://dnrc.mt.gov/wrd/water\\_rts/wr\\_general\\_info/wrforms/wr\\_forms.asp](http://dnrc.mt.gov/wrd/water_rts/wr_general_info/wrforms/wr_forms.asp)

Visit the mountain pine beetle website at [www.beetles.mt.gov](http://www.beetles.mt.gov)

Did You Know?

Mountain snowpack averaged from 120 to 140 percent of normal by the historic peak of snow water content around April 15 and unseasonably cool temperatures and continued snowfall, both in the mountains and on the prairies, caused snowpack water content to continue to soar. The Governor’s Drought and Water Supply Committee website was re-configured to provide additional information about flood and water supply related information—from flow projections to flood assistance—to help give Montanans the tools necessary to prepare for future water use regardless of the conditions. Visit <http://nriss.mt.gov/Drought/status/>.



Fish passage installed at Swede Creek. Photo by Jim Bower

CARDD will contract to survey Montana waterways for aquatic invasive species. Once DNRC determines the extent of the weed problem, projects will be funded to address infestations.

CARDD is authorized to fund nine Irrigation District projects. These projects will line a total of 25, 210 feet of canals and replace 60,000 feet of open ditch with pipe. This will improve the efficiency of those irrigation systems.

The fire and aviation management bureau provided fire training courses for 2,300 attendees across Montana.

How is Hydraulic Fracturing Done?

After a horizontal lateral is drilled and a cement casing set, a perforating gun is put into the wellbore. An electrical charge is sent through the gun which shoots small holes through the well casing and cement into the formation. After the perforation is complete, a solution of water, sand, and additives is pumped down the wellbore and into the casing at extremely high pressure. As the mixture is forced out of the perforations and into the surrounding rock, the pressure causes the shale to fracture which creates a pathway connecting the reservoir to the well and allows the released oil to flow to the wellbore.

Industry has perfected hydraulic fracturing technology so that as many as 24 to 30 different fracturing stages can be done in one 10,000 foot lateral wellbore. This technology has dramatically increased production from horizontal Bakken Formation wells.

Visit [www.drought.mt.gov](http://www.drought.mt.gov) for drought resources.



Persons with disabilities who need an alternative, accessible format of this document should contact DNRC at PO Box 201601; Helena, MT 59620, or by phone 406/444-2074 or fax 406/444-2684.

300 copies of this document were printed at an estimated cost of \$1.71 per copy. The total cost of \$513.00 includes \$513.00 for printing and \$0.00 for distribution.

Visit us online: [www.dnrc.mt.gov](http://www.dnrc.mt.gov)